Mating and Cages

To ensure virginity, males and females should be separated in the larval or pupal stage or within 16 hours after adult emergence. Combine these immediately with mates and blood feed two or three days later. One may use older adult males from stock cages for crosses if necessary, because one male will mate several females.

A relatively small number (e.g. about 10 females and males) of *gambiae, stephensi,* and *albimanus* adults will mate well in pint (~1/2 liter) paper cups. One pint cup holds up to 100 adults without crowding so this is a good container for most crosses unless you are doing large-scale screening.

If you are faced with small numbers of adults to mate, consider adding phenotypically marked adults to help get the overall number up and isolate the female you're after later. If you need to mate one female or male, add 3-5 males or females in a small cup.

Either of the above approximately 4 liter cages is good for adults. The cylindrical one is constructed from a paper can or plastic bucket. Tube-gauze has been stapled into a hole cut in the side to permit the introduction of cups for pupae or egg collection. The top is covered with mosquito net on which a sugar source can be placed. The cubical cage

(Savage and Lowe, Mosq. News 31:111-112, 1971) consists of a single-piece bent-to-shape aluminum sheet covered with tube-gauze. A sugar source is placed inside the cage.

We have had fair success with single-pair matings in small (approx 120ml) plastic vials (Qorpak No. 3891, 6.75 cm deep, 4.5 cm diameter). For microsatellite mapping particularly, this method is preferable to "involuntary assisted copulation". This mating advice is good for *A. gambiae*, but may not be appropriate for all anophelines. Moreover, the mating does not occur in these containers as early as it typically would being delayed from the typical 1 or 2 days after emergence to 6-7.

These vials are also useful for collecting eggs from individual females. The vial is half-filled with water and lined with a filter paper strip. Females are introduced to the vial through the lid for oviposition.